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(54) Title: ACETIC ANHYDRIDE ACTIVATION FOR C-TERMINAL PROTEIN SEQUENCING

(57) Abstract

A method is provided for C-terminal sequencing of a protein or peptide. An important feature of the method is the formation of an oxazolone moiety at the C-terminus of a protein or peptide by treatment with acetic anhydride under basic conditions followed by conversion of the oxazolone to a thiohydantoin moiety by treatment with thiocyanate under acidic conditions. Yields of thiohydantoin are further enhanced by delivering thiocyanate as the conjugate acid of a sterically hindered alkylammonium cation.

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(54) Title: AUTOMATED MOLECULAR BIOLOGICAL DIAGNOSTIC SYSTEM

(57) Abstract

Self-addressable, self-assembling microelectronic system for performing molecular diagnosis, analysis, multi-step and multiplex reactions in microscopic formats. Actively controlled reactions include nucleic acid hybridization, immunoassays, clinical diagnosis and multi-step combinatorial biopolymer synthesis. Controller interfaces with user via input/output devices preferably including a graphical display. The controller may interface with a power supply and interface, the interface providing selective connection to individual microlocations, polarity reversal, and selective potential or current levels to individual electrodes. A combined system for performing DNA sample preparation, hybridization, detection and data analysis integrates multiple steps. Charged materials are transported preferably by free field electrophoresis. DNA complexity reduction is preferably achieved by binding DNA to a support, cleaving unbound materials such as by restriction enzymes, and transporting the cleaved fragments. Active, programmable matrix devices include a square matrix pattern with fanned out electrical connections and optional electrical connections beneath specific microlocations resulting in a highly automated DNA diagnostic system.